American Creosote Works Site

PENSACOLA, FLORIDA — MAY 2001

In September 2000, the U.S. Environmental Protection Agency approved the design for cleaning up contaminated soil, sludge and sediment at the American Creosote Works Superfund Site (the Site) in Pensacola, Florida (see Figure 1). This fact sheet announces approval of the design of the cleanup remedy and provides an update on other cleanup activities at the Site.

This fact sheet also discusses work conducted at the Site since the last fact sheet was published in December 1999. Previous fact sheets are available by request or can be reviewed at the information repository, located at the West Florida Regional Library.

Words appearing in color are defined in the glossary on page 4.

EPA Approves Design of Cleanup Remedy for Soil

Note: *The Site has been divided into two phases of work, known as "operable units." Operable Unit 1 addresses contaminated soil, sludge and sediment, which represent the source of contamination at the Site. Operable Unit 2 addresses groundwater contamination at the Site.*

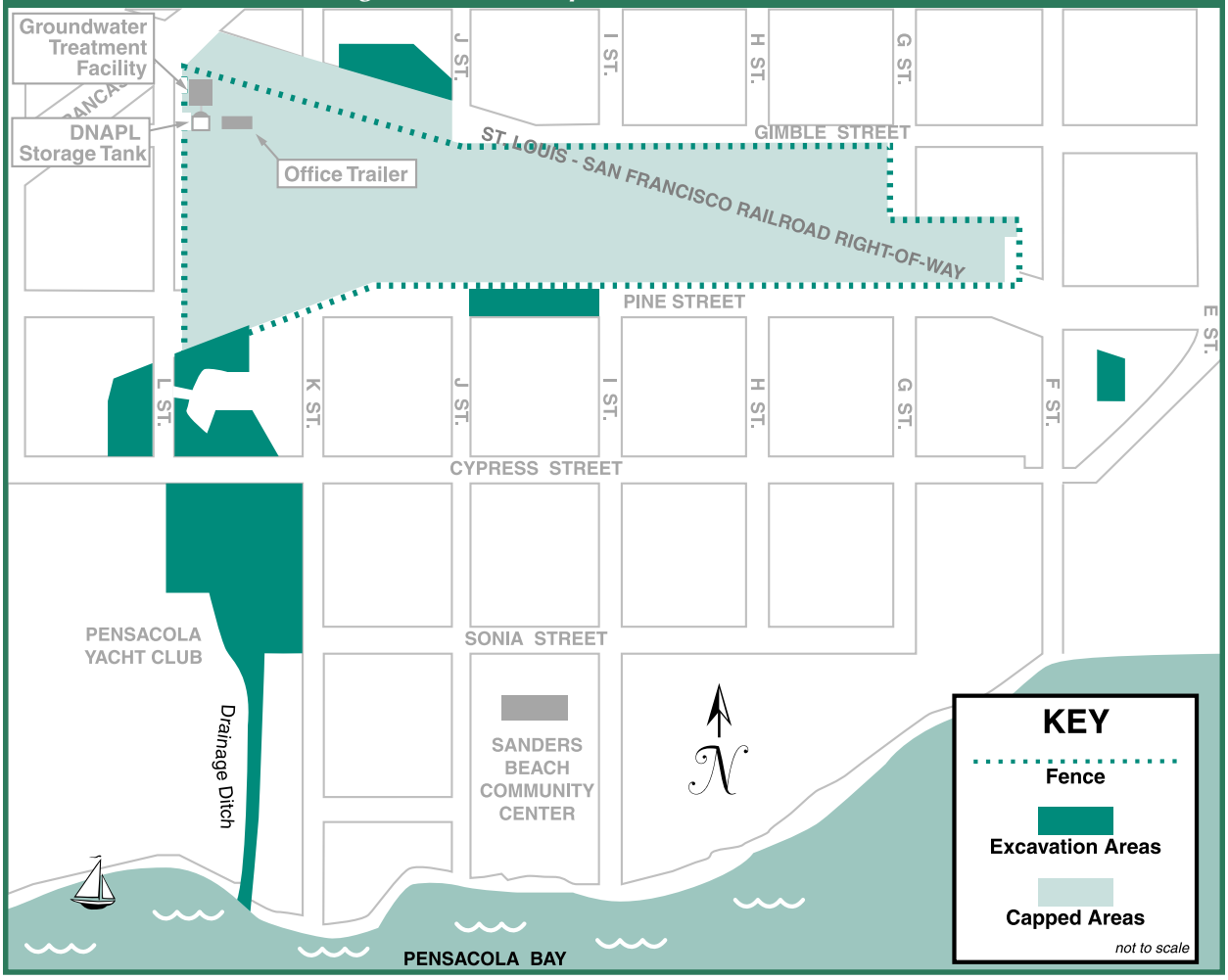
The amended record of decision (ROD) for Operable Unit 1 soil, sludge and sediments was signed in May 1999. This document described the cleanup remedy for the Site. EPA's approval in September of the design for these activities moves the Site one step closer to final cleanup. The U. S. Army Corps of Engineers' Mobile District (USACE) will conduct the cleanup and operate and maintain the existing groundwater treatment system at the Site.

During the design phase, EPA and USACE identified an alternative cap design to cover the soil at the Site. While the cleanup remedy described in the amended ROD provided for this cap, it did not specify the exact type of cap that would be used. Based on EPA's potential need to install more extraction wells through the cap and possible future uses of the Site, EPA selected an asphalt-based cap that has special additives that make the asphalt more durable and impermeable.

The estimated cost of the cleanup has increased from $1.7 million (which was estimated in the ROD) to over $6 million. EPA will provide more information about the reasons for this cost increase and other changes to the remedy in an "explanation of significant difference" sometime this year. (For more information about all the other activities of the Operable Unit 1 cleanup remedy, see the box on page 4.)

Despite EPA's approval of the design, the soil cleanup temporarily has been delayed because of both state and federal funding shortages. For federally funded cleanup projects, the Superfund law requires the state to pay 10 percent of the cleanup costs. Last fall, the Florida Department of Environmental Protection (FDEP) did not provide the necessary cost-sharing assurances, citing budget constraints and unresolved technical issues on the design. As a result, EPA funds set aside for the Site were distributed to other Superfund projects. The EPA Atlanta office has reinstated its request for construction funding for this year, and negotiations between EPA and FDEP have resumed. New federal funds may not be available, however, until late 2001 or 2002.

Figure 1 - Site Map With Excavation Areas



Results of Off-Site Soil Sampling

In November 1999 several additional soil samples were taken to delineate Site contamination that has migrated off site. Four borings were made on the north side of the Site along the railroad right-of-way. All four of the soil samples collected were found to have **benzo[a]pyrene**, a constituent found in creosote, above the remedial goals specified in the ROD. Four samples were collected from borings at a single-family residence on Pine Street, just southeast of the Site. Three of these four samples were found to contain concentrations above the cleanup levels listed in the ROD. Finally, two borings were taken near the southwest Site boundary at a retail-property site at L Street and Pine. Both samples were found to contain concentrations above the cleanup levels.

In February and March 2000 USACE returned to investigate suspected migration of contaminants on Pensacola Yacht Club (PYC) property. A total of 66 samples were collected from 22 soil borings up to three feet in depth, along a drainage ditch on the property. (See Figure 1 for the location of this ditch.) Of these, 17 soil samples were found to exceed benzo[a]pyrene concentration limits set in the ROD. Twenty-three sediment samples exceeded the cleanup levels established for carcinogenic **polycyclic aromatic hydrocarbons**.

In August 2000 USACE collected 41 samples from soil borings located farther out from previous sample locations on the railroad right-of-way, the retail-property site and the PYC property. Of the samples collected from eight borings on the right-of-way, seven borings were found to have at least one sample that exceeded benzo[a]pyrene concentration limits. Of the two borings made at the retail-property site, one boring had two samples that exceeded concentration limits. One of three samples collected on the PYC property was found to contain benzo[a]pyrene concentrations approximately equal to the limit established in the ROD.

In November 2000, 55 additional samples were taken from 19 new boring locations. These were selected to evaluate further the levels of contamination in the area along the railroad right-of-way and on private property located to the north of the site. Analytical results indicated that 13 of the samples had benzo(a)pyrene in excess of the cleanup goal, while one sample

contained **dioxin** above its cleanup limit. Most of the contamination appears to be limited to the surface, to a depth of one foot. Two of the borings above concentration limits were contaminated down to three feet in depth.

Removal of Contaminated Soil

Once funding is approved for Operable Unit 1, removal of contaminated off-site soil will begin. Figure 1 shows the areas where soil will be removed. It is anticipated that it may take up to two months to remove all the off-site contaminated soil. EPA will take precautions to keep the soil removal from being too disruptive to the community and those whose properties will be affected. Residents in the apartment complex on L Street and in one single-family residence may be temporarily relocated during the soil removal. Measures will be taken to keep down the dust, and the air will be monitored for particulates during the excavation. There is the possibility that L Street may need to be closed to traffic during the time the soil removal will occur at locations on that street. The excavated soil will be taken to the Site where it will be graded and capped. The modified asphalt cap will be extended to cover the contaminated portion of the railroad right-of-way along the northwest boundary of the Site.

Progress of DNAPL Recovery

USACE continues to remove the **dense nonaqueous phase liquids (DNAPLs)** at the Site. As of early April 2001, over 71,000 gallons of concentrated DNAPL have been removed and shipped off site since the beginning of the DNAPL recovery process. The previous recipient, Giant Cement of North Carolina, has stopped using creosote as a fuel supplement. The DNAPL now is being shipped to RHODIA, Inc. in Baton Rouge, Louisiana for incineration.

Since publication of the last fact sheet and following an indirect lighting strike, the automated recovery system has been repaired. From August 1999 to August 2000, the total down time for the facility was 103 days. Not all the down time was due to damage, however. There are alarm sensors that shut the system down to prevent potential overflows and spills. During the period of physical damage and after the power supply was repaired, DNAPL removal continued by manual operation of the extraction pumps.

During the control system repair, an augmented sensor system was installed. A local company under contract installed the enhanced control system and repaired the existing system. The automatic sensors and controls increase the amount of creosote that can be extracted from the recovery wells.

In addition, the system has been updated for remote access to the site and expanded control via computer link. Remote monitoring and actual system control of major components now is possible. The new sensor system has reduced on-site operations and maintenance time by up to 30 percent. Typical operator's time on site is approximately one- to two-days-per-week, depending upon maintenance and repair needs.

Redevelopment of the Site

EPA's selection of a modified asphalt cap was influenced in part by a letter in October 1999 from the City of Pensacola, indicating interest in owning the Site for future redevelopment. The City asked EPA to cap the Site with materials that provide protection of human health and the environment as well as permit commercial use. While EPA's primary Superfund mission is to provide human health

SITE HISTORY

The 18-acre ACW Site is located one mile southwest of the intersection of Garden and Palafox Streets and 600 yards north of Pensacola Bay and Bayou Chico *(see Figure 1)*. Wood preserving operations were carried out at the Site from 1902 until 1981. Creosote and pentachlorophenol (PCP) were two preservatives used at the Site. Wastes from these operations contaminated soils and groundwater. In 1983, EPA placed the ACW Site on the National Priorities List, EPA's list of top priority hazardous waste sites in the country. EPA conducted numerous investigations and found chemical contamination in on-site and off-site soil, sediment and groundwater.

In 1985, EPA signed a Record of Decision (ROD) for cleaning up the soils and sediments. EPA's remedy was to place these materials in a landfill on the Site. The State of Florida disagreed with this decision, citing the need for more information. Consequently, EPA evaluated other options and in 1989 signed a ROD selecting bioremediation to treat the surface soils. Bioremediation is a process that uses naturally occurring microorganisms to digest contaminants and break them down into nonhazardous components. Subsequent studies showed that bioremediation would not be effective on some of the chemicals found at the Site. In May 1999, EPA issued an Amended ROD selecting on-site containment and capping.

EPA signed a ROD in 1994 selecting a two-phase approach to clean up the groundwater. Phase one involves the removal of dense nonaqueous phase liquids (DNAPLs). Phase two will involve cleaning the groundwater. EPA completed construction and began operation of Phase I, the DNAPL removal system, in 1998.

In the summer of 1997, EPA and FDEP signed a state Superfund contract in which EPA secured 10 percent in matching funds from the State that is required by the Superfund law. it will be used for construction and start-up of the DNAPL recovery system. In March 1999, EPA hired the U.S. Army Corps of Engineers - Mobile District to operate the DNAPL recovery system and design the on-site containment remedy for soil, sludge, and sediment.

and environmental protection, it also has a Superfund Redevelopment Initiative that provides for consideration of reuse in the planning and cleanup process. A drawing of how the redeveloped Site might appear is shown in Figure 2. For more information about the Superfund Redevelopment Initiative, visit EPA's web site at: **www.epa.gov/superfund/programs/recycle**.

Technical Assistance Grant Regulations Revised

Recent revisions to the Technical Assistance Grants (TAG) requirements now make grant money more readily available to local community groups affected by Superfund sites. The final rule, published in the Federal Register, will promote more effective public participation in the Superfund cleanup process.

For a copy of the notice visit EPA's web page at: **www.epa.gov/fedrgstr/** and choose "Oct. 2." Funds are available for the Site. For more information on how to apply for a TAG, contact Rosemary Patton at 404-562-8866.

DESCRIPTION OF THE SELECTED REMEDY FOR OPERABLE UNIT 1

Soil, sludge and sediments contaminated with **creosote** will be consolidated on the Site. This will isolate the waste and prevent chemicals in the waste from moving into surrounding areas. The surface of the waste will be covered with a special asphalt cap to prevent erosion and rain from seeping through to the underlying soil. Drainage channels will be installed to manage stormwater runoff. The groundwater under the capped area will be monitored to determine how effective the remedy is. Other parts of the remedy described in the amended ROD include:

- *Demolishing, decontaminating, and disposing of foundations and debris in an off-site landfill.*
- *Excavating contaminated soil in residential areas and the Pensacola Yacht Club (PYC) that exceeds EPA's remedial goals. This soil will be combined and placed on the Site.*
- *Backfilling excavated areas with clean fill, then regrading and landscaping them.*
- *Removing to a maximum depth of three feet contaminated sediment in the PYC drainage ditch that exceeds EPA's remedial goal and moving it to the Site.*
- *Regrading, revegetating, and restoring disturbed areas in the PYC ditch.*
- *Repairing or replacing existing security fence around the Site as needed.*
- *Periodically sampling sediment in the PYC drainage ditch and providing regular maintenance on the cap at the Site.*

FOR MORE INFORMATION...

Call EPA's Information Line

If you have any questions about this project, call EPA at 1-800-435-9234 and speak with Mark Fite, Remedial Project Manager

Visit the Information Repository

Reports and plans for the ACW Site are located at:
West Florida Regional Library
200 West Gregory St., Pensacola, FL 32501
850-435-1763

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Glossary

Aquifer: *an underground formation of sand, soil, rock, or gravel that can store and supply groundwater to wells or springs.*

Benzo[a]pyrene: *A polycyclic aromatic hydrocarbon. It is a yellowish, greasy constituent found in creosote.*

Creosote: *A colorless to yellowish greasy liquid with a smoky odor and burned taste used as a wood preservative. In waste form, usually an oily black liquid.*

Dioxin: *A family of chlorinated hydrocarbon compounds known chemically as dibenzo-p-dioxins. Dioxins can be highly toxic and persistent in the environment.*

DNAPL (dense nonaqueous phase liquids): *DNAPLs can include creosote, solvents, and pesticides. DNAPLs are heavier than water and sink until they settle on the bottom of an aquifer, forming pools of pure waste that slowly dissolve in the surrounding water.*

Groundwater: *The supply of fresh water found beneath the earth's surface (usually in aquifers) that is often used for supplying wells and springs.*

Polycyclic aromatic hydrocarbon (PAH): *Hydrocarbons with multiple benzene rings. PAHs are a typical component of asphalt, fuels, oils and greases.*

Sediment: *Solid material, such as sand, soil, and minerals, that have settled to the bottom of a body of water.*

Superfund: *A Superfund site is an area contaminated by hazardous substances that pose a threat to human health and the environment, where EPA's Superfund program either funds the cleanup of the site, works with the state to clean up the site, or oversees cleanup by those responsible for the contamination. EPA lists the hazardous waste sites that are our country's priority for cleanup on its National Priorities List (NPL).*

Figure 2 - Possible Future Use Illustration of the American Creosote Works Superfund Site in Pensacola, Florida